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IEEE Transactions on Computational Social Systems

Special Issue on Knowledge-Infused Learning for Computational Social Systems

Over the last decades, research on computational social systems has gained much more attention, with thousands of researchers and practitioners leveraging diverse research findings and experimental models to enrich this domain. Thanks to the digital age, which has made the computational social system a reality. However, the integration of this technology in our daily lives leads to the generation of enormous amounts of data. The scale of this data is vast, and it presents unprecedented opportunities to examine complex social behaviours, ranging from the proliferation of infectious disease to socio-economic disparity. Probably these instances were further enhanced with the associated research findings.

Usually, learning the fundamental patterns in social data that goes beyond the object-based generalization to some external knowledge can be defined in the form of networks and structured graphs. The major problem here is there is too much big data (structured and unstructured data) and not enough techniques to manage it. Despite massive research on big data technologies, querying data from computational social systems is still a technical challenge. This is where precisely knowledge-infused learning makes a difference for computational social systems. Knowledge-infused learning has become the more compelling research stream to organize the knowledge obtained from social databases. It provides an efficient way to integrate information extracted from multiple data sources. These objectives are mainly achieved through the help of key technologies such as deep learning, computer vision, and natural language processing (NLP). The domain knowledge expressed in knowledge graphs is being inputted into machine learning models to make better predictions. The primary application of knowledge-infused learning in computational social systems is organizing the information over the internet and integrating it across business enterprises for various purposes. It provides context-sensitive responses, identifies relations, reduces ambiguity, supports explanation, structures new knowledge, and applies novel techniques to derive meaningful insights.

In short, knowledge-infused learning forms the fundamental construct in social computational systems and has numerous applications with various functionalities. The confluence of cutting edge technologies such as artificial intelligence with knowledge-infused learning establishes new significant trends for social computational systems. This synergy sets up an exciting frontier in data-driven algorithms for computational social science. This special issue explores the current opportunities and future advancements in knowledge-infused learning for computational social science. It presents a unique opportunity for researchers from computer science, social science, and statistics to present innovative research contributions in this context collaboratively. Topics include but are not limited to:

- Effective ways of integrating knowledge infused learning for computational social systems
- Role of NLP in knowledge infused learning for computational social systems
- Graph convolutional networks for computational social systems
- Overcoming the challenges of computational social systems with knowledge infused learning
- Knowledge-infused crowdsourcing for computational social systems
- Role of scalable computing in knowledge-infused social systems
- Automated knowledge extraction in social systems
- Organizing and storing the knowledge over internet with deep knowledge infused learning
- Explainable machine learning for driving technological innovations across computational social systems
- Innovations in knowledge-infused mining and learning for social impact
- Extracting knowledge and context specific discussion on social systems with knowledge-infused learning
- Advances in knowledge-infused learning for social network analysis during complex situations such as pandemics and extreme weather events

Important Dates:

Manuscript Submission Deadline Date:	28, February 2022
Authors Notification Date:	30, April 2022
Revised Papers Due Date:	25, July 2022
Final notification Date:	05, October 2022

Submission Guidelines:

All papers are to be submitted through the IEEE's Manuscript Central for Transactions on Computational Social Systems https://mc.manuscriptcentral.com/tcss. Please select "Special Issue" under Manuscript Category of your submission. All manuscripts must be prepared according to the IEEE Transactions on Computational Social Systems publication guidelines https://ieeesmc.org/publications/transactions-on-computational-social-systems.

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